

Application No. 10/672,232
Atty. Docket No. 105942-53921
Amendment and Response to Restriction Requirement

Amendments to the Specification

At page 3, lines 8-10 please rewrite the paragraph so that it reads as follows:

-- In the embodiments herein, reference to high CP cocoa solids and cocoa solids having a high cocoa procyanidin content is not intended to be limited to the polyphenols (*i.e.*, procyanidins) present in the cocoa solids but is intended to cover other particulate food-grade antioxidants. --

At page 4, lines 9-20, rewrite the paragraph so that it reads as follows:

-- In a second embodiment, an additive for a food or a food supplement and a process for its preparation is provided. The additive comprises pretreated, partially or fully defatted cocoa solids having a high cocoa procyanidin (CP) content. The cocoa solids are pretreated by mixing with about 9% to about 90% by weight, based on the cocoa solids, of sterol ester(s) and/or stanol ester(s) which are liquids at temperatures of about 80°C or less, preferably at about ~~60~~ 60°C to about 80°C. The cocoa solids after the pretreatment have a cocoa procyanidin content of at least about 50 to about 75 milligrams of a procyanidins, preferably about 60 to about 75 milligrams, and more preferably about 75 to about 80 milligrams per gram of defatted cocoa solids.

Alternatively, the additive can comprise high CP, partially or fully defatted cocoa solids pretreated by mixing with up to about 5% ~~by weight~~, preferably about 0.05% to about 0.1%, and more preferably about 0.1% to about 0.3% by weight, based on the cocoa solids, of a lecithin. --

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At page 5, line 2 and continuing onto the top of page 6, line 3 please rewrite the paragraph so that it reads as follows:

-- In a fourth embodiment, a dry, ready-to-eat food and a process for its preparation is provided. The process comprises the steps of: (a) pretreating high CP cocoa solids with about 9% to 90% of sterol ester(s) and/or stanol ester(s) and optionally with up to about 20%, preferably about 1.5-10%, and more preferably about 0.5-3% of a chocolate liquor and/or up to about 5% of an emulsifier[[:]], the weights being based on the cocoa solids; (b) mixing the pretreated cocoa solids and a syrup with a mixture of dry ingredients comprising grain(s), flour(s), and/or protein(s) and optionally dried fruits and/or nuts to obtain a formable food; and (c) forming the food. The cocoa solids prior to the pretreatment have a cocoa procyanidin content of at least about 5 75 milligrams per gram of defatted cocoa solids. The pretreated cocoa solids and the syrup are liquid when blended into the dry ingredients and solid when the formed food is cooled to room temperature. Optionally, the food can be decorated or enrobed with a chocolate, a yogurt, or a flavored sugar. Preferably, when a granola bar is being prepared, the pretreated cocoa solids and the syrup are premixed at about 60°C to about 80°C to form a binder syrup prior to blending with the dry ingredients. The preferred cocoa solids are partially defatted cocoa solids containing about 8 to about 30% fat and having a cocoa procyanidin content of at least about 50 to about 150 milligrams, preferably about 50 to about 80 milligrams. The preferred sterol ester(s) are prepared from rapeseed oil and comprise β -sitosterol, campesterol, and stigmasterol.. The emulsifier can be selected from the group discussed above; the preferred emulsifier is lecithin. The preferred syrup is a corn syrup having a DE of about 40 to about 65.

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The syrup optionally comprises a whole milk powder, a skim milk powder, and/or a malted milk powder, a flavorant, one or more vitamins and/or minerals, a sugar such as brown sugar and/or fructose, and/or a salt. The dry ingredients used for the granola bar include grains such as rice crisps, soy crisps, and/or oats. Other useful dry ingredients are flours such as bran, corn, wheat, and/or rice flour and proteins such as a milk protein, an egg protein, a soy protein and/or whey. A dry, ready to eat chocolate granola bar optionally containing almonds, dried cherries, or blueberries can be prepared by this process. The bar contains at least about 2, preferably about 2 to about 25, more preferably about 2.5 to about 10, and most preferably about 3 to about 7 milligrams of cocoa procyanidins per gram of the bar which is at least about 65%, typically about 90 to 100%, of the cocoa procyanidin originally present in the cocoa solids used to prepare the bar. The bar also ~~contains~~ contains about 4 to about 200, preferably about 40 to about 65 milligrams of sterol ester(s) and/or stanol ester(s) per gram of the bar. --

At Page 19, lines 20-30 and continuing onto the top of page 20, please rewrite the following paragraph so it reads:

-- The cocoa procyanidin content of the cocoa solids, binder syrup, chocolate foods (e.g., granola bars), and chocolate confectioneries (e.g., dark or milk chocolate chews) was determined by normal phase high pressure liquid chromatography (HPLC) on silica with fluorescent detection. The details of this approach are covered in Adamson, G.E., Lazarus, S.A., Mitchell, A.E., Prior, R.L., Cao, G., Jacobs, P.H., Kremers B.G., Hammerstone, J. F., Rucker R., Ritter, K.A., Schmitz, H.H., HPLC Method for the Quantification of Procyanidins in Cocoa and Chocolate Samples and

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Correlation to Total Antioxidant Capacity, J. Ag. Food Chem.; 1999; 47 (10) 4184-4188.

Cocoa solids were defatted with hexane prior to extraction of the procyanidins. Binder syrup and the chocolate products (*e.g.*, chocolate chews and chocolate granola bars) were cyro-ground to a fine powder and immediately extracted[.] with 70% acetone, 29.5% water, and 0.5% acetic acid. The binder syrup and finished products were not defatted prior to procyanidin extraction. Cocoa procyanidin quantitation was achieved through the use of a well characterized composite reference standard material. Samples were then compared with the composite standard to accurately determine the levels of procyanidins. --

On page 22, at lines 17-18, please rewrite the paragraph so that it reads as follows:

-- The resulting cocoa nibs are pressed using in two screw presses to extract the butter from the cocoa solids. --

On page 22, at lines 25 to 31, please rewrite the paragraph so that it reads as follows:

-- Fair average quality (FAQ) cocoa beans having an initial moisture content of 7.4% by weight and a fermentation factor ~~level~~ of 233 (31% slaty, 29% purple, 22% purple brown, and 17% brown) are selected as the starting material. The cocoa beans are then passed through an infra-red heating apparatus. The feed rate of beans through the infra-red heater and the infra-red heater bed angle are varied to control the amount of heat treatment the beans receive. The amount of time the beans spend in the infra-red heater (residence time) is determined by the bed angle and the feed rate. The times that should be used to prepare the sample material are listed in the table

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below. At the outlet of the micronizer the IBT of the beans is measured. Expected values are also shown in the table. --

On page 23, at lines 3-9, please rewrite the paragraph so it reads as follows:

-- A 1 kg sample of infra-red heated beans, collected off the infra-red heater at different IBTs, are cracked into smaller pieces to facilitate the separation of the nib from the shell. The cracked beans are then passed through a laboratory scale winnowing system. The cocoa nibs are then crushed and milled into a coarse chocolate liquor, ~~which crushes and grinds the nibs into a chocolate liquor.~~ The normal operating temperature for the liquor in the crusher is approximately 50°C. The cocoa nibs are ground for one hour. The expected cocoa polyphenol values are shown below. --